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ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: PROTEIN KINASES

(57) Abstract: This invention relates to novel proteins, termed INSP081, INSP082 and INSP091, herein identified as members of the Germinal Center Kinase (GCK) subfamily of the STE20 family of protein kinases, preferably as NCK-interacting kinases (NIKs) and more preferably as NIK-like embryo specific kinases (NESKs), and to the use of these and nucleic acid sequences from the encoding genes in the diagnosis, prevention and treatment of disease.

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INTERNATIONAL SEARCH REPORT

International Application No
PL 1 / GB 03/03862

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N15/54 C12N9/12 A01K67/027 C07K16/40 C12Q1/68
C12Q1/48 A61K38/45

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, Sequence Search, WPI Data, PAJ, BIOSIS, MEDLINE, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/33099 A (WALIA NARINDER K; GURURAJAN RAJAGOPAL ; INCYTE GENOMICS INC (US); B) 25 April 2002 (2002-04-25) Seq Id Nos 16, 38 abstract; claims; table 2 page 32, line 6 - line 9 page 34, line 3 - line 10 page 36, line 23 - page 37, line 3	1-3, 10-19, 25-54
X	WO 99/53036 A (SUGEN INC ; WHITE DAVID (US); PLOWMAN GREGORY (US); MARTINEZ RICARD) 21 October 1999 (1999-10-21) cited in the application seq Id Nos 16, 104, 105 abstract; claims	1-3, 10-19, 25-54

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "8" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Inter: I Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>NAKANO ET AL.: "NESK, a member of the germinal center kinase family that activates the c-Jun N-terminal kinase pathway and is expressed during the late stages of embryogenesis"</p> <p>THE JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 275, no. 27, 7 July 2000 (2000-07-07), pages 20533-20539, XP002266890 cited in the application abstract; figure 1</p>	1-3, 10-19, 25-54
A	<p>-----</p> <p>KANAI-AZUMA ET AL.: "NrK: a murine X-linked NIK (Nck interacting kinase)-related kinase gene expressed in skeletal muscle"</p> <p>MECHANISMS OF DEVELOPMENT, vol. 89, 1999, pages 155-159, XP002266891 cited in the application</p> <p>-----</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/03862

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☒ Claims Nos.: 20-24 and partly 25,28,39,41-46
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-3 and partly 10-54

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3 and partly 10-54

Polypeptides and polynucleotides according to Seq Id Nos 1-42 and their uses.

2. claims: 4-6 and partly 10-54

Polypeptides and polynucleotides according to Seq Id Nos 43-100 and their uses.

3. claims: 7-9 and partly 10-54

Polypeptides and polynucleotides according to Seq Id Nos 101-158 and their uses.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.1

Although claim(s) 26 and 28-35 (as long as they depend on claim 26) are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Although claims 44-46 and 54 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box I.1

Claims Nos.: -

Rule 39.1(iv) PCT - Diagnostic method practised on the human or animal body

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy

Continuation of Box I.2

Claims Nos.: 20-24 and partly 25,28,39,41-46

Present claims 20-24 and 25, 28, 39, 41-46 (as far as they relate to claims 20-24) relate to compounds defined by reference to a desirable characteristic or property, namely their ability to bind specifically to the GCK subfamily of STE20 protein kinases or being able to increase or decrease the level of expresion or activity of a polypeptide according to claims 1-13.

The claims cover all compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compounds by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, no search has been carried out for these claims.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/JP 03/03862

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0233099	A	25-04-2002	AU 2735202 A	29-04-2002
			CA 2425963 A1	25-04-2002
			EP 1373517 A2	02-01-2004
			WO 0233099 A2	25-04-2002

WO 9953036	A	21-10-1999	AU 3642499 A	01-11-1999
			CA 2369172 A1	21-10-1999
			EP 1073723 A2	07-02-2001
			JP 2002522009 T	23-07-2002
			WO 9953036 A2	21-10-1999
			US 2003050230 A1	13-03-2003
			US 6656716 B1	02-12-2003
